#### Sierra Nevada Conservancy-Progress Report

# Sierra Nevada Conservancy Grant Program Safe Drinking Water, Water Quality and Supply, Flood Control River and Coastal Protection Act of 2008 (Proposition 84)

Grantee Name: Sierra Institute for Community and Environment

Project title: Developing a working landscapes Watershed

**Management Plan for the Almanor Basin** 

SNC Reference Number: SNC 07021 Submittal Date: March 17, 2011

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Check one:

\_\_\_\_ 6-Month Progress Report
X Final Report

**6-Month Progress Reports** should reflect the previous six months. **Final Reports** should reflect the entire grant period.

**A. Progress Report Summary:** (Please provide a general description of work completed during this reporting period.)

#### For the period of June 2008 to January 2011

This project resulted in a long-awaited Watershed Management Plan for the Lake Almanor basin. Direction of the plan's development was facilitated by the Sierra Institute and overseen by the citizens of the basin, who are intimately familiar with not only the challenges to maintaining a clean Lake Almanor, but also solutions to such challenges. Additionally, technical advisors and resource agency personnel reviewed the plan. All activities described in this project can be linked to the plan. One key element of the plan focused on maintaining water quality monitoring of Lake Almanor, and this objective was met. As a result, the lake has been safeguarded for two years by a comprehensive sampling regime that has shown the fluctuation in oxygen and temperature over the seasons. The data shows that the distribution of each at varying depths has maintained a limited and increasingly reduced habitat for fish. Monitoring has also uncovered phytoplankton as a concern that could affect human health and requires additional work. Understanding this data has been key in light of temperature increases and projected precipitation pattern changes as a result of climate change. Finally, linking the importance of this watershed and lake to downstream users is the best way to create longterm oversight of this lake. That linkage is the basis for an ecosystem service pilot project that has been researched and outlined. Through collaboration and consultation with Forest Service officials, private timber operators, decision-makers and PG&E, a roadmap to instituting this pilot has been consolidated in proposal form, ready for long-term funding. Achieving these successes has both resulted in, and benefitted from, public education activities that include public workshops, forums, newspaper articles, and a host of other outreach efforts.

#### PROJECT SCHEDULE

DETAILED PROJECT DELIVERABLES	TIMELINE	Status
18 monthly meetings with ABWAC	July 2008 - Jan. 2011	Completed
18 monthly meetings with ABWAC Wildlife subcommittee	July 2008 – Jan. 2011	14 Completed
18 monthly meetings with ABWAC Land Use subcommittee	July 2008 – Jan. 2011	19 Completed
8 bi-monthly meetings w/ ABWAC Water Quality subcommittee	July 2008 – Jan. 2011	18 Completed
4 subcommittee/public workshops/fieldtrips	July 2008, Jan. 2011	Completed
4 management plan public workshops	July 2008 – Jan. 2011	Two completed
4 watershed tours	July 2008 – Jan. 2011	Completed
Progress report	January 2009	Completed
Completed kiosk and library information at Chester Library	March 2009	Completed
Watershed newsletter	July 2008 - Jan. 2011	Completed
Progress report	July 2009	Completed
Minimum 12 educational newspaper articles on workshops, field tours, and status of watershed management plan	July 2008 – Jan. 2011	Completed
Water quality database refinement and updates	July 2008 – Jan. 2011	Completed
Lake Almanor water quality monitoring program protocols	March 2009	Completed
Implement Lake Almanor water quality monitoring program	May 2009	Completed
Completed Watershed Management Plan	December 2009	Completed
Progress Report	January 2010	Completed
Watershed ecosystem-services investment report	July 2010	Completed
FINAL REPORT/FINAL PAYMENT REQUEST	March 17, 2011	Completed

# B. Deliverables or Outcomes completed during this Reporting Period or Milestones Achieved:

A new watershed information center in the Chester Library was established in 2008 and one of the library's computers now serves as a point of access for Google Earth virtual watershed tours and all manner of watershed information. Informational watershed brochures, watershed newsletters, and general watershed information are also available at the computer.

The close of 2008 saw the first public forum as residents of the watershed were invited by ABWAC to attend the first annual State of the Watershed Forum. A dozen community members attended the event and participants had the opportunity to meet with the

ABWAC's subcommittees to discuss the committee's current projects, express their concerns, and share their priorities. Many of the comments collected were later developed into action items in the first draft of the watershed plan. The public event most crucial to this project took place in February 2009 as members of the public and representatives from the U.S. Forest Service, PG&E, the Feather River Coordinated Resource Management Group, the Planning Commission, Plumas County Flood Control and Water Conservation District, and Plumas County Environmental Health turned out to share their visions for the watershed. Participants were provided with an overview of the draft watershed management plan and were then split into four groups to meet with ABWAC's subcommittees and discuss the draft watershed plan. The plan was then refined and presented to the Plumas County Board of Supervisors and in April 2009, the board unanimously approved the Lake Almanor Watershed Management Plan.

By the act of approving the Watershed Management Plan in April 2009, the Plumas County Board of Supervisors committed county support to its implementation and has agreed to consider all recommendations. Additionally, the plan is particularly timely as it will be instrumental in the creation of the Plumas County Master Plan. The ABWAC plan is being viewed as a model for other parts of the county. Other entities who have committed as partners to various portions of the plan are: the U.S. Forest Service, the California Department of Fish and Game, the California Department of Water Resources, and other non-governmental entities such as the Lake Almanor Fishing Association.

The supervisors expressed how pleased they were with the ABWAC and the outcome of the watershed planning process. The Watershed Management Plan was also presented to the Plumas County Planning Commission in 2009 with an extensive question and answer session. The plan has been recognized as a model document that combines policy and outreach to leverage credibility.

Another major achievement for 2009 was conducting the first non-agency sampling of Lake Almanor's water quality to monitors temperature, oxygen, nutrients, and plankton at four lake stations. The 2009 monitoring program included four rounds and was funded entirely by donations from local communities. The ABWAC's water quality committee has raised enough money through presentations to community and homeowner's groups and other sources to evaluate key water quality parameters and develop assessments of the lake's health. Donations have allowed the Water Quality Committee, a subcommittee of the ABWAC, to contract with the Plumas County Flood Control and Water Conservation District to hire Dr. Gina Johnston to oversee and implement the program. Two water quality reports have been produced and distributed to the board of supervisors for their approval, to the chambers of commerce, to nearby Lassen County and a variety of other recipients. Monitoring results are shared in the newspaper, on the website and in an end-of-the year report. Dr. Johnston also conducted a 2010 round of monitoring and both 2009 and 2010 reports are available on the Sierra Institute website. The 2010 report is included as **Attachment A.** 

The start of a new project also occurred in 2008, when nearly 70 community members participated in the first annual Lake Almanor Clean-up and cleaned up areas in the

Feather River, the Chester Meadows area, the Almanor Causeway, Hamilton Branch, and other sites. The cleanup in 2011 will be its 4<sup>th</sup> year and has seen involvement grow each of the two subsequent years. The Cleanup has also served as a conduit to working with organizations such as the Feather River Coordinated Resource Management Group, CalTrans, PG&E, Plumas County Department of Public Works, the Plumas County Resource Advisory Committee, and Feather River Disposal.

Over the course of the spring and summer of 2009, ABWAC members were busy on several public education efforts. This includes: a workshop featuring an overview of mussel biology and the mussel threat before demonstrating proper inspection and decontamination techniques; a workshop on Grebes in which 40 residents learned how to best manage the Almanor grebe population; a watershed information booth at the Almanor Art Show.

In 2010, the Board of Supervisors solicited help from ABWAC for its input on two issues. The first demonstrates the ability of ABWAC to be an appropriate body to vet local issues. First, the Land Use Committee was asked to research the idea of allowing over-night boating on Lake Almanor and after collecting information from Environmental Health specialists in neighboring counties, a recommendation was sent to the Board of Supervisors to hold a meeting with all interested parties and invite public testimony to make a decision. Second, the 1984 Plumas County General Plan is being updated and elements of the watershed management plan has been referenced in terms of what updates are necessary. In 2010, the ABWAC was asked by the County Planning Director to specifically provide feedback on the General Plan.

As the ABWAC established ecosystem services as a high priority item in the plan, members were educated in understanding how a project could work. First, a comprehensive presentation on ecosystem services was the focus of a 2009 ABWAC meeting, with PG&E, the Nature Conservancy and UC Berkeley in attendance. ABWAC members also learned more through an 'Ecosystem Services Tour' conducted in 2009. Rather than hold two workshops for the Watershed Management Plan, ABWAC and the Sierra Institute held two workshops regarding ecosystem services. The first was held in June 2009 and focused on two issues that demonstrate landscape-scale threats to Lake Almanor that can be tied to restoration through ecosystem services. First, PG&E's chief hydrologist presented groundbreaking data showing the long-term forecast for the region, which shows a sharp decrease in snow pack. Second, the United State Geologic Survey's Dr. Charlie Alpers presented information regarding the listing of Lake Almanor as 'impaired,' per the Clean Water Act for mercury. The second workshop was held in January 2011 and focused more closely and the link between a changing snowpack and the need to monitor lake health through a monitoring program. The proposal for ecosystem services is included in Attachment B.

A comprehensive list media generated as a result of the project, and relevant flyers and photos is included in **Attachment C.** 

**C.** Challenges or Opportunities Encountered: (Please describe what has worked and what hasn't; include any solutions you initiated to resolve problems. If your project is not on schedule, please explain why here.)

#### **Monitoring project**

The citizen monitoring component of the monitoring program was not launched for three reasons: 1) reduced Sierra Institute engagement with ABWAC as a result of the state budget crisis and budget revisions in 2008-2009; 2) reduced priority of this item, especially in light of the fact that a basic program was launched with resident support; and 3) no permanent watershed coordinator in place in the summer through October 2009. The Sierra Institute therefore decided not to launch a local citizen lake-monitoring program until 2011. Overall, the ability of the ABWAC to continue its work despite several setbacks is a milestone in and of itself and speaks to the capacity of the group to maintain cohesion and commitment to the vision. This quality is hard to quantify but is important to acknowledge. The primary challenge to the group's capacity is related to the status of a watershed coordinator to work with them. When state funding was frozen in December 2008, work on the project was interrupted and had to adjust. Despite this, 2009 saw the finalizing of the watershed management plan and completion of six special workshops and watershed events. Additionally, the bulk of funding for ABWAC coordination was used by Fall 2010 and so with limited support, the ABWAC still met monthly and even completed a 5-year internal review.

#### **Unexpected Issues**

A. The ability of the ABWAC to address emerging issues was demonstrated in late 2009, as the vulnerability of the lake to invasive mussels was not well understood. Between July 2007 and September 2008, mussels were found in nearly 20 waterbodies in southern California. Once mussels are established, they cannot be eradicated. Zebra mussels were first found in North America in 1988 in the Great Lakes. In addition to destroying aquatic ecosystems, mussels pose an additional threat to waters in Northern California: water supply. In early 2008 when this grant was written, invasive mussels had not yet been established in California. By the time the Watershed Management Plan was written, mussels were recognized as a serious threat and were therefore incorporated into the plan. The effort to prevent quagga and zebra mussels from infesting Lake Almanor is in the Watershed Management Plan under Objective 8 (Prevent the spread and establishment of invasive species in the Almanor Basin). An ad-hoc committee comprised of real estate agents, PG&E and USFS representatives, and fishing interests came together to determine how to best proceed in addressing the unknowns. A plan was developed and funding was sought, but not acquired, and so in the absence of support the committee completed their own. First, they developed a survey to understand boating behavior and attitudes on the lake. Over Memorial Day Weekend and 4th of July weekend in 2010, ABWAC members surveyed over 300 boaters in person. Data collected allowed for a basic boater profile to be created. After analyzing the data, it was determined that thus far; Lake Almanor is at low risk for mussel invasion.

#### B. Climate Change

The ABWAC reviewed results from the 2009 water quality-monitoring program and discussed the implications of rising lake temperature as it correlates to monitoring,

mussels and other factors affecting Lake Almanor. The discussion in part arose from the release of a report showing Lake Almanor is showing a significant warming trend. Alarmingly, the rates of change suggest that summertime lake surface temperatures may be warming more rapidly than surface air temperatures. The question of how exactly the system may be impacted by, and respond to, a changing climate was put toward PG&E's chief hydrologist Dr. Gary Freeman. He presented at a public forum in the basin in June 2010. Having studied hydrologic trends in the Almanor Basin for years, Dr. Freeman treated local residents to a preview of what was to be published as a professional paper in September of 2010 at the Western Snow Conference. Dr. Freeman presented approximately 50 minutes worth of information regarding hydrologic data in the Lake Almanor basin, focusing on trends that have been identified as a result of warmer pacific storms. The presentation shocked much of the audience. The quality and specificity of the data, and the frankness of Dr. Freeman's presentation clearly left the impression that climate change is the key issue to the watershed. For instance, stream inflows to Lake Almanor have diminished by 15% since 1960, the Mt. Stover Ski area April 1 snow pack has declined by 59% since 1949, and the overall declining snowpack in the basin is reflected in a 21% decrease in runoff to Lake Almanor since 1960.

#### Outreach

- Due to budget shifts and changing coordinators, the spring and summer 2009 Quarterly newsletter were not produced. A fall/winter newsletter was produced and distributed in December 2009. Items for a project-specific newsletter were included in the Sierra Institute's Summer/Winter 2010 newsletter (see Attachment C).
- A 'State of the Watershed' workshop was held in 2008 and not held in 2009 due to budget issues and a change in the watershed coordinator. A 2010 and 2011 workshop were held, in June 2010 and January 2011, respectively.
  - **D.** Unanticipated Successes Achieved: (Please describe any additional successes beyond completing scheduled tasks or meeting scheduled milestones.)
- The Board of Supervisors has relied upon ABWAC recommendations in regards to land use policy, lake management, and other issues. Additionally, county representatives have mentioned that ABWAC is the only group of its kind in the county and that having the ABWAC model reproduced in other areas would be beneficial. Additionally, the ABWAC's participation in the county's General Plan update has been requested.
- ABWAC and the Sierra Institute rapidly and effectively initiated and coordinated the project to address invasive mussels. This demonstrates the capacity ABWAC has established in its relationships with agencies, members of the public, and other experts that allows it to be responsive to urgent needs.

**E. Compare Actual Costs to Budgeted Costs:** (Please refer to your grant agreement to list your deliverables/budget categories and budgeted costs compared to actual costs incurred during this reporting period in the table below.)

PROJECT BUDGET CATEGORIES	Budgeted SNC Dollars	Actual Dollars	Current Balance
A. Management plan development	\$50,831.85	\$52,612.51	-\$1,780.66
B. Ecosystem services investment	\$18,550	\$19,199.43	-\$649.43
research and plan development			
C. Administration	\$11,339	\$11,339	\$0
D. Travel	\$3,500	\$1,672.70	\$1,827.30
E. Workshop/monitoring training	\$119.94	\$119.94	\$780.06
F. Equipment, including laptop, GIS	\$1358.19	\$1240.70	\$895.20
software upgrade/subscription			
G. Chester Library Kiosk/watershed	\$30.02	\$30.02	\$0
display			
H. Supplies for meetings and	\$2,700	\$2,673.54	\$26.46
workshops			
I. Printing-meetings, workshops	\$1,000	\$651.94	\$848.06
J. Special project reports/brochures	\$2,200	\$1,206.12	\$993.88
K. Postage/mailing expenses	\$450	\$195.57	\$254.43
L. Newspaper ads/publicity	\$250	\$109.35	\$140.65
GRAND TOTAL	\$92,329	\$92,329	\$0

#### **Explanation:**

Overall variance (\$8,196) between budgeted and actual dollars accounted for less than 10% of the entire budget and most changes can be attributed to simply underestimating staff time necessary to complete the project.

**F.** Do you have information to report on the project-specific Performance Measures for your project? (If so, please list the Performance Measures below and describe your progress.)

See page 13

G. Were there any other relevant materials produced under the terms of this Agreement that are not a part of the budgeted deliverables? If so, please attach copies. (Include digital photos, maps, media coverage of project, or other work products.)

Refer to Attachment C.

#### Please Complete this Section for FINAL Report ONLY

#### Capacity-Building Results and Collaboration and Cooperation with Stakeholders:

Over the three years of this project, coordination with agency and other resource managing entities has been so extensive that completing the project was both an outcome of strong relationships with partners and also completely reliant on such relationships to ensure success. The creation of an effective and community-supported watershed management plan began by learning the issues identified by stakeholders in the Lake Almanor Basin Stakeholder Assessment. Original consultation began with 30 individuals and existing groups in the basin, such as the Water Quality Subcommittee, East Shore Sewer Committee, and 2105 Committee meetings. Through several public involvement workshops, a watershed management plan was drafted with the help of key institutional partners such as:

- The USFS Almanor Ranger Station
- Plumas County Planning Commission
- PG&E
- Feather River CRM staff
- Plumas County Environmental Health
- Plumas County Flood Control District
- General public affiliated only through proximity to the lake

By being partners in the development of the plan, these stakeholders have played key roles in the endorsement of the plan and its implementation by providing input, volunteers, funding and general support. The capacity of the Almanor Basin Watershed Advisory Committee to effect change is an extension of the support and resources made available through these partnerships. As an example of this capacity, ABWAC members and Sierra Institute staff subsequently worked on several issue-oriented projects with each of these partners and are described in more detail below.

A few examples of issue-related work with partners outside of the watershed management plan:

- The ABWAC subcommittee for invasive mussels was comprised of representatives of California Department of Fish and Game, representatives of PG&E, local fishing groups, and real estate agents.
- The implications of the proposed listing of Lake Almanor as "impaired" for mercury included representatives of Plumas County, the Plumas Corporation, and the U.S. Forest Service.
- Exploring long-term plans for septic treatment in the Almanor Basin was conducted in members of the Regional Water Quality Control Board, the Plumas County Board of Supervisors, and the Plumas County Health Department.
- Creating the monitoring plan required consultation with a technical advisory committee composed of: John E. Reuter, Tahoe Environmental Research Center, UC Davis; Charles Watson, Advanced Geologic Exploration; Fraser R. Sime, Chief, Water Quality and Biology Section – California Department of Water and Power;

Michael J. Derrig, Hydrologist, Lassen National Forest; Kurt Sable, U.S. Forest Service; Dennis Heiman, Central Valley Water Board. Additionally, the water quality subcommittee of the ABWAC is composed of Dr. Gina Johnston, Charles White (PG&E) Brian Morris (Plumas County Department of Flood Control and Water Conservation) and others.

- Ecosystem Services: Developing a proposal lead to presentations from the Nature Conservancy, UC Berkeley, and Collins Pine for ABWAC. Work for this project also resulted in meetings with Deputy Secretaries in the Department of the Interior, Undersecretaries at the Department of Agriculture, and a meeting with the Chief of the Forest Service and Regional Forester.

#### **Description of Project Accomplishments:**

#### 1. Most Significant Accomplishment

Describe in one concise, well-written paragraph, the most significant accomplishment that resulted from this grant.

The Watershed Management Plan has allowed the ABWAC to be the most recognized public voice for issues central to the Almanor Basin. The plan encompasses three comprehensive goals, 18 objectives and over 100 tasks to ensure its implementation. It has been presented to various government agencies and has given the ABWAC clarity in purpose and credibility. Further, the other two key pieces of this project – water quality monitoring and ecosystem services – are described and contained within the plan. Citizen-based watershed management either succeeds or fails based on the capacity of the group and the plan has enabled ABWAC to maintain capacity for meeting challenges and vetting issues for the foreseeable future. In conclusion, an institutional mechanism is now in place that will provide responsive oversight to Lake Almanor and its basin for the foreseeable future.

#### 2. WOW Factor

If applicable, please describe anything that happened as a result of the project or during the project that is particularly impressive.

The work of the group led to public recognition that climate change is already impacting water quantity, water quality, and fish habitat. The Almanor Basin is not only undergoing significant impacts, but these impacts have local, regional and statewide implications. The group not only continued to meet, but it completed a plan involving contentious issues, tackled new and unanticipated issues and became a model for the rest of the county. As a result of the successes Sierra Institute achieved with ABWAC, we were asked to partner with the Plumas Corporation in extending the project into areas outside of the Almanor area and into other areas of the Feather River. The ABWAC model may now be extended and additional partners are interested in the Almanor basin as a result of this project.

#### 3. Design and Implementation

When considering the design and implementation of this project, what lessons did you learn that might help other grantees implement similar work?

First, the best part of this project is the identification of the process that would work best to protect the lake and basin – the watershed management plan. Outlining how to achieve a consensus-based plan is more critical than correctly identifying the 'issues' that will be most pressing during the project. Essentially, it is hard to predict what environmental or political factor may be the most dominant factor to address, so allowing a project plan to be adaptive to needs is crucial. Putting more effort and thought into the criteria with which to judge needs can be more important than predicting all the critical needs at the outset. A good example is that climate change impacts were not expected to be nearly as significant as they proved to be.

#### 4. Indirect Impact

Please describe any indirect benefits of the project such as information that has been developed as a result of the project is being used by several other organizations to improve decision-making, or a conservation easement funded by this grant that encouraged other landowners in the area to have conservation easements on their property.

Several indirect benefits of this project have been mentioned in other places of the report, but one is the credibility and consistency of the water quality monitoring data has put the water temperature of Lake Almanor in a more urgent light. PG&E is in the process of renewing its license to operate the Upper North Fork Feather River Hydroelectric Project and PG&E must reduce the temperature in the North Fork to 20 degrees Celsius. One alternative is a "thermal curtain" designed to remove cold water and through publication of the water monitoring reports, public workshops and news articles linking warm water to a host of threats, the idea of a thermal curtain is under greater scrutiny. Water temperature issues have always been important for maintaining the highly valued cold water fishery, but lake monitoring has suggested a relationship between water temperature increase and an increase in blue-green algae, which can impact public health and result in economic losses for the Almanor basin.

#### 5. Collaboration and Conflict Resolution

If you worked in collaboration or cooperation with other organizations or institutions, describe those arrangements and their importance to the project. Also, describe if you encountered conflict in the project and how you dealt with it, or if there was conflict avoided as a result of the project.

If one key tool to implementing this project were to be identified, it would be collaboration and coordination with others. From the manager of the local Best Western franchise supporting ABWAC through the donation of meeting space, all the way up to the Plumas County Board of Supervisors supporting the project when funding was suspended – the community interaction with ABWAC is critical to its success. Primary collaborative partners are the Collins Pine Co., the Lassen National Forest, PG&E, Plumas County Flood Control and Conservation District.

Most importantly, this project has lead to a partnership with the Feather River CRM and the ability to expand this project into the rest of the Upper Feather River Watershed. The CRM recognized that our ability to work with socio-political institutions blends well with on-the-ground restoration efforts they are pursuing in order to create a more resilient

meadow system. As a result, we crafted a proposal that has funded a third of the total project, which is a step in the right direction.

#### 6. Capacity-Building

SNC is interested in both the capacity of your organization, as well as local and regional capacity. Please describe the overall health of your organization including areas in need of assistance. SNC is interested in the strength and involvement of your board, significant changes to your staff, size and involvement of membership. In addition, describe how your project improved capabilities of partners, or the larger community.

The Sierra Institute has formed several partnerships as result of this project that continue to thrive and provide the basis for further collaboration. For instance, the Sierra Institute's work with ABWAC was key to collaborating with the Feather River Regional Water Management Group to develop a three-year project described above. This project will expand the Sierra Institute's work in watershed coordination to the entire Upper Feather River, while continuing to develop ABWAC through seeking additional funds. This joint endeavor could also support the planning and development of an ecosystem services pilot project that explores investment values of forest health, natural water storage and carbon sequestration.

The Sierra Institute now has three full-time program associates, two part-time administrative staff and a full-time intern. In the last two years, there have been three new projects that relate to the work achieved in the Almanor basin with ABWAC. The Sierra Institute has been instrumental in landscape management in the Burney Creek & Hat Creek watersheds, along with the Fall River RCD. In addition to a recent Collaborative Forest Landscape Restoration preproposal, the Institute has facilitated a successful Burney/Hat Creek Community Forest and Watershed Group and the group continues to receive attention across the state for its work. The Sierra Institute recently piloted a public-engagement process in developing socioeconomic indicators for watershed health for the Department of Water Resources.

#### 7. Challenges

Did the project face internal or external challenges? How were they addressed? Describe each challenge and any actions that you took to address it. Was there something that SNC did or could have done to assist you? Did you have to change any of your key objectives in response to conditions "on the ground"?

The most serious challenge to completing this project was the interruption in funding that resulted in more time and energy being spent to seeking additional and emergency support as well as the instability this created in job security for the watershed coordinator. Additionally, the timing of this instability coincided with the Watershed Management Plan being finalized and approved, which was both fortunate and unfortunate. Fortunately, the momentum created by the plan's approval carried the ABWAC through the critical 8-month period of uncertainty, but unfortunately this also resulted in the momentum being used to sustain the group rather than capitalize on its success. The only key objective that changed significantly was a citizen monitoring program. Overseeing citizens to monitor their water would have taken at least half of the time allotted to the

watershed coordination using a professional staff to conduct monitoring, the only oversight needed was provided by a contract developed by the water quality committee and Plumas County. An on-the-ground condition that changed from what was known during the development of the proposal came through the listing of the lake for mercury under the Clean Water Act, and the advance of invasive mussels in California from 2008 to 2010. Time and energy was necessarily diverted to address these issues rather than spend time pursuing funding for an ecosystem services project.

#### 8. Photographs

Grantees are strongly encouraged to submit photos, slides or digital images whenever possible. These images will be used for SNC publications such as annual reports or on the website. Please make sure you clearly identify location, activity, and your project with each submitted image. Images will be credited to the submitting organization, unless specified otherwise.

Please see Attachment C.

#### 9. Post Grant Plans

What are the post-grant plans for the project if it does not conclude with the grant? Include a description of the following (if applicable): (1) Changes in operations or scope; (2) Replication or use of findings; (3) Names of other organizations you expect to involve; (4) Plans to support the project financially, and (5) Communication plans?

Securing a sustainable source for continued watershed coordination is a high priority for the Sierra Institute and under a newly approved grant, the Sierra Institute has received a third of the funding necessary to provide watershed coordination to the entire Upper Feather River over the next three years. Beyond the three years, we have identified three ways to sustain a coordinator for the long-term, as a diversity of support is necessary in uncertain times. First, the Sierra Institute is seeking a long-term foundation partner that will commit to a basic level of support. This would mean developing an endowment or single-source donor to continue this work. Secondly, as elements of the project are advanced, institutional partners will be approached to determine if their agency may accommodate project elements. Resource agency priorities occasionally shift and through informing policy during this project, the Sierra Institute will determine which elements may be institutionalized by third parties.

Third, the watershed coordinator will work to secure long-term investment in the watershed through payments being generated by an ecosystem service project. The dollars that are invested into the production of this valuable resource will be used to continue long-term management, which includes a watershed coordinator.

#### 10. Post Grant Contact

Who can be contacted a few years from now to follow up on the project? Please provide name and contact information.

**Sierra Institute**: Executive Director Jonathan Kusel (Jkusel@SierraInstitute.us) or Program Associate Emily Creely (ecreely@SierraInstitute.us) at 530-284-1022

ABWAC: Chair Ryan Burnett: rburnett@prbo.org or 530-258-2869

#### **SNC-approved Performance Measures**

# H. Do you have information to report on the project-specific Performance Measures for your project?

**1.** Completed management plan that is adopted by the citizen's advisory committee and approved by Plumas County Board of Supervisors for implementation in year two.

The Watershed Management Plan was completed and approved by the board of supervisors in April 2009. Funding for its total implementation is currently being sought

**2.** Completed and implemented (in year 1) cost effective monitoring program for Lake Almanor; 10 citizen monitors are trained and citizen monitoring program launched; State water quality standards are met for all monitored parameters.

The Sierra Institute worked with the ABWAC Water Quality Subcommittee and Technical Advisory Committee to identify three standards of monitoring (a basic to "gold standard" monitoring program). The citizen monitoring part of the monitoring program was not launched for three reasons: 1) reduced Sierra Institute engagement with ABWAC as a result of late 2008-2009 budget changes; 2) reduced priority of this item, especially in light of the fact that a basic program was launched with resident support; and 3) no permanent watershed coordinator in place in the summer through October 2009. Instead, a monitoring program with professional staff was launched in 2009 with funding from two homeowners associations and Plumas County. Thus far, two annual monitoring reports have been produced which are comparable to 40 years of sporadically collected data.

**3.** Effective, efficient, and vibrant 11-member ABWAC is relied on by supervisors for watershed plan and implementation and other basin recommendations.

The Board of Supervisors rely upon ABWAC recommendations for land use policy, lake management and other issues. The ABWAC was proposed as an existing group to be consulted for Almanor Basin sections of the county's General Plan update. Although this was not realized, ABWAC members were asked to participate in the workgroups established across the county to update the plan and asked specifically for their input. Supervisor Thrall has instructed the Planning Department to present information in the future to the ABWAC, rather than hosting a separate work session. This was done as ABWAC is recognized as the best place to bring the public together on this issue Additionally, ABWAC is the only group of its kind in the county and supervisors has mentioned that the ABWAC model should be reproduced in other areas.

**4.** A minimum of 15 newspaper articles and 9 watershed newsletters produced along with 6 public workshops including tours of the North Fork's stairway of power and the Almanor Basin.

Since the beginning of the grant period, more than 15 articles have been generated from ABWAC-related activities. A summation of all media generated by ABWAC is in **Attachment C.** Budget shifts and changing coordinators has resulted in two ABWAC-generated newsletters thus far and a third was merged with the Sierra Institute newsletter. Additionally, two articles were included in the Plumas Corporation newsletter. So far, six public workshops and trainings have been conducted and several tours of the 'Stairway of Power,' involving more than 50 participants, have been completed.

5. Achieve 40 percent recognition of basin planning by local residents

Although recognition has not been quantitatively assessed yet, recognition of the zebra and quagga mussel threat and basin-wide response to this issue suggests ABWAC has high visibility and credibility. Additionally, volunteer turn out for the lake cleanups is extremely high and 25 to 50 percent are aware of the planning and related project work going on. Additionally, two part-time residents have called the Sierra Institute to volunteer for the ABWAC.

**6.** Almanor website use is tripled over the duration of the grant.

The website's visitation rate has not been quantitatively measured largely because the Sierra Institute conducted a complete overhaul of its website in 2010. The media and others have been directed to the website on a regular basis and many positive comments have been generated.

**7.** Hold annual "state of the watershed meeting" in partnership with a minimum of six agencies and with participation by 100 local residents and other stakeholders.

This was completed in 2008 and not done in 2009 due to budget issues and a change in the watershed coordinator. However such a meeting was held in 2010 and 2011. Participation totaled more than 100 people and primary agency participation included PG&E, California Department of Water Resources, Plumas County Flood Control, and Planning Department, the U.S. Forest Service, the Feather River Coordinated Resource Management Group, and Plumas County Environmental Health.

**8.** Examine ways to secure added investment in the watershed; produce a draft watershed investment report with partners in year three; Secure \$20,000 in year 2 and \$30,000 in year 3 from PG&E.

PG&E's funding for basin activities is unreliable, mostly due to the lack of resolution of the 2105 re-license of the dam. Although providing \$5,000 for the first lake cleanup, they provided only \$3,000 for the third cleanup. Additionally, PG&E have withheld funds to Plumas County for the basin and efforts to secure \$15,000 from PG&E for mussel prevention was unsuccessful. Investment in the watershed has been demonstrated by homeowners rather than PG&E as homeowners associations have levied fees on parcels to pay for water quality monitoring.

9. North Fork and the Almanor Basin are declared a pilot area by federal, state, and local agencies to examine and advance an ecosystem services program.

The ABWAC made ecosystem services a high priority item in their planning effort and this is significant because until recently, most members did not understand the concept. The Nature Conservancy, UC Berkeley, and Collins Pine have led workshops for the group and will conduct another in 2011. Considerable effort has been devoted to informing agencies of the work to date, and recently both Collins Pine Co. and the Almanor Basin Ranger District of Lassen National Forest have signed on as partners to advance landscape-level work. Meetings with Deputy Secretaries in the Department of the Interior, Undersecretaries at the Department of Agriculture, and the Chief of the Forest Service and Regional Forester, have resulted in interest, but not committed resources yes. Additionally, two grant applications were drafted to support an ecosystem service pilot project in the Almanor basin, but none as yet have been funded.

#### SIERRA NEVADA CONSERVANCY REQUEST FOR PAYMENT - PROPOSITION 84 GRANT PROGRAMS

#### MAIL PAYMENT REQUESTS TO:

SIERRA NEVADA CONSERVANCY 11521 BLOCKER DRIVE, SUITE 205 AUBURN, CA 95603

ATTENTION: GRANT ADMINISTRATION

(530) 823-4670

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AGREEMENT TERM:	07/01/08 thru 3/1/12		<u> </u>		<del></del>			
REMIT TO:	·		`					
GRANTEE NAME:	Sierra Institute for Community and	d Environment						
ADDRESS:	P. O. Box 11		,		ن ،	,		
CITY/STATE/ZIP:	Taylorsville, CA 95983							
CONTACT PERSON:	Amy J. Hafsrud		PHONE/FAX:	530-284-1022				
COMPANY LINGUIS	printy of materials							
500.00 1) PROJECT BUDGET CATEGO PER EXHIBIT A	PRIES	2) BUDGETED EXPENSES	3) EXPENSES THIS REPORTING PERIOD	4) YEAR TO DATE (YTD) EXPENSES	(BUDGETED	6) PERCENT OF ACTUAL YTD EXPENSES TO BUDGETED EXPENSES		
A Management plan develop	ment	50,831.85		52,612.51	-1,780.66	103.5%		
B Ecosystem services investi	18,550.00	602.44	19,199.43	-649.43	103.5%			
C Administration	11,339.00	· · · · · · · · · · · · · · · · · · ·	11,339.00	0.00	100.0%			
D Travel	3,500.00	72.96	2,604.80	895.20	74.4%			
E Workshop/monitoring traini	119.94	602.44	124.94	-5.00	104.2%			
F Equipment, including lapto,	1,358.19		1,240.70	117.49	91.3%			
G Chester Library Kisosk/wat	ershed workshops	30.02		30.02	0.00	100.0%		
H Supplies for meetings and	workshops	2,700.00	50.00	2,673.54	. 26.46	99.0%		
I Printing-meetings, worksho		1,000.00	12.58	993.02	6.98	99.3%		
J Special project reports/broo	hures	2,200.00		1,206.12	993.88	54.8%		
K Postage/mailing expenses		450.00		195.57	254.43	43.5%		
L Newspaper ads/publicity		250.00		109.35	140.65	43.7%		
TOTAL PROJECT COSTS		\$92,329.00	\$737.98	\$92,329.00	\$0.00	100.0%		
7) TOTAL OF EXPENSES THIS REPORTING PERIOD: 8) 10% WITHHOLDING/OTHER		CERTIFICATION	: By my signature beloon behalf of the Grant					
ADJUSTMENTS (IF ANY):			lifornia, that this repor					
9) ENTER AUTHORIZED ADVANCE BALANCE (IF ANY):		Print Name:	Jonathan Kusel					
10) ÀMOUNT APPLIED TO ADVANCE REPAYMENT:	\$0.00	Signature:	Year	Zul				
11) REQUESTED REIMBURSEMENT:	\$737.98	Date:	1-Feb-11	,				

**Expenses Jonathan- September 2010** 

Expenses Jonathan	iles	miles \$	food/other	
· ·			•	
Health Project				7.0
Travel to Quincy	50	\$24.00		7-Sep
Travel to Portola/meeting	112	\$53.76		15-Sep
Travel to Greenvill-Dana	22	\$10.56		27-Sep
Sierra Nevada Alliance-Mar	iposa		•	
Travel to South Lake Tahoe	275	\$132.00		27-Sep
Burney/Hat Creek	260	. 4120.64		1-Sep
Meet with RAC/Redding	268	\$128.64		8-Sep
meet with Lassen N.P.	131	\$62.88		о оср
Natural Resource Program-	GHS		•	
meet with Teachers	<sub>*</sub> 20	\$9.60		7-Sep
•	* *	* .		
Special Projects- Westwood		1 .		
Travel to Westwood-survey	74	\$35.52		9-Sep
TI .	74	<b>\$</b> 35.52		23-Sep
Biomass			•	
Field tour	42	\$20.16		17-Sep
Travel to Quincy/meeting	50	\$24.00		20-Sep
Almanor				
travel for Strat. Planning	78	\$37.44	9-11	is there money?
Subtotal			•	
		\$574.08		,

Total

\$574.08

#### Emily Creely (Dec 26 to Jan 25)

Date	Purpose (location)	Project (Charge to)	Total Miles	Total
1/11/11	Quincy (mtg)	Biomass	43	\$20.64
1/19/11	Chester	ABWAC (SNC)	74	\$35.52
1/20/11	Quincy (mtg)	Biomass	42	
				\$20.16
			Total	\$76.32

1/11/11

Dinner \$36

**Biomass** 

Attached Receipt

TERMINAL ID :

79721456

SRV : 2

MERCHANT #:

192704150128589

MASTERCARD \*\*\*\*\*\*\*\*\*\*\*\*0610 SALE SALE BAICH: 000492 INUGICE: 014867 JAN 11, 11 RRN: 101200613130 AUTH NO: 017891

15:31

BABE

\$30.15

15%=\$4.52

20%=\$6.03

TIP

TOTAL

EMILY CREELY THANK YOU PLEASE COME AGAIN

\$453.34



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Subtotal

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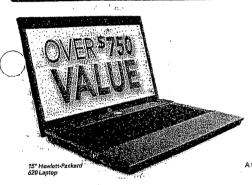
**Account Summary** 2/13/11 Date Due 1/20/11 Billing Date 530-284-1022-082996-8 Account Number 436.06 Amount of Last Bill 436,06CR Payments Received Thru 1/05/11 Thank you for your payment! .00 Balance Before Current Charges 453.34 **New Charges** 

Total Amount Due

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**	<b>ACCOUNT</b>	<b>ACTIVITY **</b>

530/284-1600

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1 Multi-Line Business Federal Pre-Subscribed Line Charge

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Feb-11

Project: Lake Almanor Coordination

\$602.44	\$127.74	\$474.70				TOTALS
\$28.75	\$3.75	\$25.00	\$20.00	1.25		Amy Hafsrud
\$406.03	\$95.53	\$310.50	\$23.00	13.5		Emily Creely
\$167.66	\$28.46	\$139.20	\$46.40	ω		Jonathan Kusel
Total payroll expense	Benefits	Total	Rate	Hours (Ecosystem Services)	Hours (Almanor)	

Total	Line L	Line K	Line J	Line I	Line H	Line G	Line F	Line E	Line D	Line C	Line B	Line A	Column 3
737 98				\$12.58	\$50.00				\$72.96		\$602.44		
	Publicity	Postage	Brochures	Printing	Supplies				Travel	Adminstration	Ecosystem services	Management plan	

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SIERRA INSTITUTE 4438 MAIN ST 4438 ARLINGTON RD TAYLORSVILLE CA 95983-9611

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### Sierra Nevada Conservancy-Progress Report

Sierra Nevada Conservancy Grant Program
Safe Drinking Water, Water Quality and Supply, Flood Control
River and Coastal Protection Act of 2008 (Proposition 84)

Grantee Name: Sierra Institute for Community and Environment

Project title: Developing a Working Landscapes Watershed Management

**Plan for the Almanor Basin** 

### **ATTACHMENTS**

- A. Lake Almanor Water Quality Reports
- B. Ecosystem Service Proposal
- C. Supporting Documentation
  - 1.Media
  - 2. Publicity and Newsletters
  - 3. Photos
  - 4.Misc

## Attachment A

Lake Almanor Water Quality Reports (2009 and 2010)

# Attachment B

Ecosystem Service Proposal

#### **Ecosystem Service Investment Plan**

Reinvestment for Resilience: Restoring Landscapes and Communities

**Objective:** Work with partners to explore and advance ways to secure ecosystem services of the watershed resources and return these values back into the watershed.

The Sierra Institute is developing a project focused on ecosystem services with the end goal of establishing mechanisms that return investment in the ecosystem back to the landscape and communities of the Lake Almanor Basin. The development of this approach to date has primarily consisted of consultation with community members, local and national resource managers and academic entities.

The Sierra Institute engaged the public through ABWAC presentations, and by conducting a tour that explored the Lake Almanor watershed and the diverse services it provides to communities and the environment. The tour gave participants a better understanding of what ecosystem services are, how support for them can improve landscape management, and how local communities impact these services. Tour participants discussed stream management and water quality, timber harvests, carbon sequestration, the importance of critical habitat, and native Maidu perspectives of ecosystem services and values. During an ABWAC presentation, representatives from the Nature Conservancy, UC Berkeley, and Collins identified potential methods to capture and invest in basin ecosystem services provided. The Sierra Institute consulted with Deputy Secretaries in the Department of the Interior, Undersecretaries at the Department of Agriculture, and the Chief of the Forest Service and Regional Forester in order to determine agency interest and potential funding sources for this project. Based on these conversations, two grant applications were drafted and submitted for a pilot ecosystem project, but neither has generated support to date, though interest and conversation continue.

The following prospectus forms the basis for seeking support to implement a pilot project that would create an economy in the Lake Almanor basin based, in part, on the basin's ecosystem services.

A successful Ecosystem Service Investment project will address the management and delivery of services to mitigate the impacts of climate change, restore landscapes and communities, and produce rural jobs. To achieve this, economic analysis is combined with community outreach with committed private land and industry partners through a pilot project to test methodology. Successful development of local economies tied to ecosystem services relies on intimate knowledge of the character of the population, the specific attributes of surrounding landscapes and avoiding a one-size-fits-all approach. The process of completing the pilot project will allow enough flexibility to enable development of a process that can be replicated.

The general approach to a pilot project is to assess key landscape services, evaluate mechanisms that exist or can be established to secure payment for services then develop

recommendations for short- and long-term implementation of an ecosystem services program that improves landscape and community resilience.

The Lake Almanor Basin provides an optimal location for a pilot project because it meets four criteria important for such a project:

- The basin's community members are well-informed and a decision-making infrastructure is in place and used by citizens, and supported by government.
- The basin provides both natural values and services that are marketed and sold, are diverse and have well-established management practices from both private and public owners.
- The size of the basin is approximately 350,000 acres, which is both large enough to provide a volume of services worth investing in and small enough to be understood.
- Private landowners have expressed interest in contribution to, and participation in a plan.

The design of the project is heavily dependent on the landscape specific to area, thus developing an on-the-ground project begins and ends with the communities in the project area. This "community" includes business, neighborhood, environmental and government interests. It is their intimate knowledge of the area that will contribute to both targeted services and identification of institutions that will be evaluated for their ability to provide revenue.

Specific tasks include determining key services within the basin and an analyzing the economic potential of revenue. Such an analysis includes mapping their distribution and identifying what benefit can be derived from adjusting either inventory, future supply and/or increased value based on outside stresses and opportunities. From this analysis, the services with the most economic benefit and highest likelihood of success in producing useable revenue to the community will be advanced for the project. The end result would be working on a suite of services that can be managed through either policy changes, price adjustments, and/or marketing and outreach plans to secure long-term economic and environmental benefit to the community's long-term resilience.

#### Pilot Project Steps:

- 1. Engage stakeholders and establish project partners.
- 2. Determine key land use regimes and services (e.g., agriculture; forestry; cattle).
- 3. Develop economic and biophysical models (e.g. maps; tradeoff curves, dollar values and balance sheets) for each key service that account for constraints and opportunities.
- 4. Select best services for the pilot project.
- 5. Identify best mechanisms to manipulate based on established economic and environmental goals.

# **Attachment C**Supporting Documentation

- 1.Media
- 2. Publicity and Newsletters
- 3. Photos
- 4.Misc

#### Attachment C1

### Summary of Media

#### 2008

- 1. County Supervisors approve Almanor Basin Funding April 16
- 2. Watershed Group meets July 9 July 2
- 3. Watershed Committee to discuss Chester Meadows August 6
- 4. Watershed group weighs in on Walker Ranch project August 20
- 5. River cleanup needs help September 3
- 6. Watershed group to meet September 8
- 7. Cleanup shows community unity September 24

#### 2009

- 1. ABWAC to examine new septic regulations January 7
- Quagga mussels could be the next pike invasion January 14
- 3. Watershed plan nears completion January 21
- 4. Smelling like a rose: septage candidate takes ABWAC seat January 23
- 5. Virtual tour of Almanor now online at library February 4
- 6. ABWAC to meet February 11
- 7. Watershed group wants input February 18
- 8. Partners join to fight quagga mussel threat February 18
- 9. Feedback benefits watershed March 4
- 10. Watershed group to discuss birds stranded in lake March 11
- 11. Watershed groups hosts limnology program April 8
- 12. Sierra Institute announces new tour line-up April 8
- 13. Stewardship Council to speak at watershed meeting tonight May 13
- 14. Free quagga/zebra inspection and decontamination training offered May 20
- 15. Donations allow for water tests May 27
- 16. Quagga mussel workshop and eradication training tomorrow May 27
- 17. Watershed group seeks new committee members May 27
- 18. Watershed group to meet in Westwood June 3
- 19. Training for quagga mussel inspection a success June 10
- 20. Volunteers of all ages clean up Lake Almanor October 7
- 21. New Watershed Coordinator October 14

#### 2010

- 1. Lake Almanor's Health & Keeping Mussels at Bay May 10
- 2. Local group to educate boaters on mussels May 26
- 3. Watershed Committee to host Open House June 10
- 4. Camping by boat at lake examined June 10
- 5. Lake Almanor clean-up scheduled for Saturday, Sept. 25 August 25
- Storrie Fire Benefits Local Schools November

#### 2011

- 1. Shrinking Snow Pack January19
- 2. Watershed Forum Tonight January 19

## Attachment C2

Publicity and Newsletters

# Attachment C3 Photos

# Attachment C4 Miscellaneous

2010 ABWAC Work Plan

ABWAC Recommendations

Survey used in Mussel Project